PSYCHOLOGICAL AND SOCIAL ASPECTS OF TUBAL INFERTILITY
A Longitudinal Study of Infertile Women and Their Men

by

Ann Lalos

Umeå University
Umeå 1985
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ABSTRACT

Lalos, A. PSYCHOLOGICAL AND SOCIAL ASPECTS OF TUBAL INFERTILITY -
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All thirty women who were to undergo microsurgical treatment for tubal infertility in 1981 and their men were investigated. Over a period of 2 years four interviews were performed with the women and two with their men. A questionnaire, semistructured interviews, symptom check-list and the Eysenck Personality Inventory were used. During this longitudinal study the couples' background, current situation and emotional and social impact of the infertility problem were investigated. The psychological and social effects of the medical investigation and treatment have been described. Expectations and hopes about the future after unsuccessful surgical treatment and the need of professional psychosocial counselling have been noted. Furthermore, the extent of psychological reactions compatible with a crisis pattern has been identified and classified. Finally, overt motives for having a child have been studied.

The infertile couples generally did not differ with respect to psychosocial background, current life situation, psychiatric anamnesis or personality characteristics when compared with apparently normal reference groups. Several deleterious emotional and social effects of the infertility were found both before and 2 years after the surgical treatment. The women admitted to suffering such effects more frequently than the men. The partners' feeling for each other were getting worse 2 years after the operation. There was also a tendency to a deterioration in opinions about marital relationships. Most of the mental symptoms recorded could be classified in terms of depression, guilt and isolation, which all are parts of the reactive phase of the common crisis pattern. The crisis of infertility, however, differs from the common traumatic crisis; it is more prolonged and there are often repeated crisis reactions. Negative effects on the couples' sexual life were reported by all individuals. The medical investigation and surgical treatment of infertility influenced the couples' mutual relationship and sexual life negatively.

Intrapsychic and interpersonal motives of childwish were dominant among both women and men. A central motive was that a child is an ultimate expression of love between a man and a woman. The motives of the infertile couples generally did not differ from those of the reference groups. Most of the couples had difficulty in working their way through and finding a solution to their infertility problem by their own means. Relatives and friends failed to fulfil a supportive function. The importance of having the possibility of professional psychosocial counselling and support parallel with the investigation and treatment were stressed by all participants.

Key words: tubal infertility - psychosocial characterization - reactions to treatment - sexual life - marital relationship - infertility crisis - childwish - counselling.

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To MARIA and SOFIA

who - hopefully - will be mothers in the 21st century
This thesis is based on the following papers, which are referred to in the text by their Roman numerals.


INTRODUCTION

The problem of infertility is as old as civilization itself (80), and the childless marriage has always been considered a great misfortune. In Genesis, man is told to be "fruitful and multiply", and it is said that children are a gift from God. Religious, cultural and social values have all set a premium on fertility. Barrenness has been viewed as a curse by the gods (47). The study of other cultures and civilizations reveals that historically, the lot of the infertile woman has not been a happy one (24). Traditionally, infertility has been regarded as the woman's problem. Until the turn of the present century, she was subjected to numerous humiliations and customarily she alone was blamed for the infertility (71). Only in the last 25 years has the male partner in an infertile couple been included in the infertility investigation, and knowledge of male factors still lags far behind knowledge of female factors in this disorder (33).

Pregnancy is probably the most dramatic, strictly female biological event - one that is meaningful not only biologically, but culturally, interpersonally, and intrapsychically as well (1). Fertility is an integral part of a woman's identity and roles (63). Women associate fertility with femininity, sexuality, body image and self-esteem (47, 53, 73, 80). Infertility can create feelings of physical inferiority which can overshadow all other personal and social values.

For the male it has been postulated that he has an instinctive urge beyond the sexual drive: this is the need to father a child (5). Fatherhood, as a developmental phase, has been characterized as having few significant differences from maternal bonding. Children attach to emotionally available fathers, just as they do to mothers. Fatherliness, like motherliness, has two prime sources of motivation: the father's identification with his child and the father's identification with his own father (39). Tenderness, gentleness, the capacity for empathy and emotional closeness, are human characteristics that apply to fathers and mothers alike. The adult who experiences the trauma of infertility has to cope with the lost ideal of oneself as a biological parent. For some, this means abandoning all hope of immortality (47).
Infertility, the inability to achieve a pregnancy within one year of having unprotected sexual intercourse, or the inability to carry through a pregnancy to live birth, is a problem that affects an estimated one couple in six of childbearing age (2, 30, 47, 54). Accordingly, about 10 million couples in the USA or at least 100 000 couples in Sweden are infertile (12, 47, 55). Medical research and clinical treatment of infertility have both made great strides in recent years, in discovering and curing problems of female and male infertility. Of those couples who seek treatment, approximately 80% will receive a definitive diagnosis of infertility caused by some organic pathology (72). In approximately 5-10% of all couples who are medically healthy, no cause of the infertility can be determined. The major causes of infertility are: male factor 30-35%, tubal factor 30-35%, cervical factor 20% and hormonal factor 15% (43). Tubal pathology represents over 50% of the causes of infertility in the female (32). After tubal surgery by microsurgical technique, approximately 30% of the women achieve a full-term pregnancy (18, 50).

A diagnosis of psychogenic infertility was very commonly applied in past years when no organic causative agent could be identified (30). As recently as 20 years ago, 40-50% of infertility cases were thought to be the result of emotional factors (27). Infertile couples were described as having typical personality traits that resulted in their inability to conceive. It is assumed that psychological factors can cause infertility by a defence mechanism to protect unconscious intrapsychic conflict from surfacing into awareness (19, 40, 51). Emotional stress associated with the infertility state or resulting from a long and demanding infertility evaluation may exert its influence through autonomic or neuroendocrine control of the reproductive process (56, 65). More recently the increased understanding of neuroendocrinology, as well as other advances in this field, has reduced supposed emotional factors as a cause of infertility to less than 5% (66). Identification of the role of psychological factors as causal agents of infertility is a confusing issue. It is difficult to distinguish cause from effect when studying the emotional factors related to the problem. However, it appears most likely that the emotional problems among infertile couples are more often a result of infertility rather than its cause (23, 42, 51, 66, 67).
It seems that most studies on the psychosocial adjustment of infertile individuals have been concerned more with psychological factors in the etiology of infertility than with the psychological sequelae. This narrow focus on "unexplained" infertility may well distract attention from the problems of the majority (4). Previous reports on infertile couples whose childlessness was caused by some organic problem say little about the couples' background, current life situation, personality characteristics and mental status. The emotional and social impact of the infertility problem on the female before tubal surgery is not well known. Furthermore, the man's role in infertility has only recently been recognized and there is little information about the impact of childlessness on the male. The starting point of the present study has been to investigate the psychological and social characteristics of a defined group of infertile couples where a diagnosis of tubal damage had been established (paper I).

Recent societal trends to delay marriage and childbearing into the later reproductive years seem to have led to an increasing number of infertile couples (2, 30). The postponing of intended conception increases the possibility of infertility. The maximum fertile age for both men and women is approximately 25 years, with a decline after age 30 (30). Increasing age in women is associated with longer use of birth control pills and possible subsequent hormonal disturbances, a higher rate of pelvic disease, and a higher incidence of abortion which also increases the risk of pelvic infection. Likewise, as men get older, they run an increased risk of exposure to harmful environmental agents and drugs, as well as an increased likelihood of contracting some disease that could indirectly impair fertility (2).

Infertility seems to have become a relevant social and medical concern (30). There are factors contributing to increasing demands for an infertility service. Not only is there an increasing number of infertile couples, but it seems that a large proportion of these couples are seeking help. Furthermore, the social environment seems to be more demanding in the 1980s, from a generation that expects to control fertility (2). The demand for comprehensive fertility management will no doubt continue to increase.
Couples attending infertility clinics generally experience feelings of frustration and inadequacy and show signs of emotional distress (4, 6, 7, 44, 66). While the somatic investigation is a comparatively simple and non-traumatic process for the man, for the woman it is complicated and often combined with pain (e.g. hysterosalpingography) and surgical risks (e.g. laparoscopy). The infertility itself and the medical process evoke many feelings. The medical investigation and treatment are usually a time-consuming and protracted process. Previous studies have been based mainly on observations/interviews/questionnaires performed on one single occasion. In the present investigation the psychological reactions to the medical investigation and surgical treatment of infertility were studied longitudinally over a period of 2 years (paper II).

Despite changing views on family size and alarming reports about overpopulation, the notion that children are an integral part of marriage is still widely accepted (8). A large part of our lives is centered around reproduction, parenthood, and the raising of a family. There are many biological, cultural and religious determinants (11). These attitudes and values still affect - consciously or unconsciously - those who wish to conceive but cannot do so. Although the childless couple is more socially acceptable in modern society, there is, nevertheless, a distinct group of infertile couples who feel the social pressure to bear and raise children (66). The pressures, overt or covert, take many forms and most couples will experience them exerted by their own family, friends, acquaintances - and even strangers (14, 49). This pressure can have serious effects on these couples' sexual life, such as loss of libido, inhibition of orgasm, and impotence (3, 26, 28, 52, 68, 76). For many couples involuntary childlessness is experienced as emptiness, a sense of not belonging, a deficiency in one's perspective of the future, a lack of purpose in life. There is also a fear of having to rely entirely on strangers in old age and a fear of unbearable loneliness upon the loss of the marital partner (8). Involuntary childlessness can be described as an invisible handicap (54). These negative psychological, sexual and social effects of infertility may disappear once the couple have got the number of children they desire.

Most of these couples will not achieve a pregnancy after the surgical treatment of tubal infertility (82). It is not known how they deal with
this situation. One purpose of this study has therefore been to investigate the psychological, sexual and social impact of infertility 2 years after unsuccessful surgical treatment of tubal infertility (paper III).

Today the ability to control fertility is often taken for granted, both in the medical profession and by the public at large. The advent of safe and effective methods of contraception has made possible control in one direction; but the converse, that one can somehow influence fertility in order to achieve pregnancy, does not hold true (20). Many couples now plan their families as meticulously as they do their education, choice of career, residential situation and major financial investments - measuring all factors and waiting until the moment to start a family is exactly right (54). Most couples in their childbearing years are accustomed to thinking in terms of preventing pregnancy, whereas to conceive and have a child is taken for granted. They usually assume that they can have children if and when they desire (55). It has been suggested that when a man and a woman become increasingly aware that reproduction is delayed and perhaps even unattainable, their emotional reactions will follow a pattern similar to that of the general crisis-reaction as described by Caplan (17). This crisis is characterized by definite psychological stress and behavioural changes which put the couple at risk for maladaptive intrapsychic and interpersonal consequences in conjunction with the possible continued failure to conceive (30). The couple often face an emotional turmoil (66), and the crisis must be dealt with individually as well as within the marital relationship (47). The problem of infertility evokes many feelings in the couple, and the first reaction seems to be one of shock, surprise, disbelief and denial (47, 55, 79, 80, 81). Thereafter, feelings of frustration, anger, loss of control and anxiety usually arise (10, 47, 55, 80). Subsequent reactions often include feelings of guilt, embarrassment, disappointment, isolation, grief, depression and mourning (10, 11, 22, 47, 55, 62). The psychological trauma of infertility has been described mainly on the basis of clinical observations on one single occasion and usually including only the female. The present longitudinal study was therefore undertaken to elucidate whether - and if so to what extent - psychological reactions compatible with a crisis pattern could be identified in a group of women with tubal infertility and their men during the clinical investigation and treatment (paper IV).
The wish to reproduce oneself, to have a child of one's own, is apparently something fundamentally human. The childwish is often complex and difficult to define; overt and covert motives are both involved in procreation. To become a parent is in many cases proof of the ability to fulfil a normal biological function and provides expression of the need to confirm the relationship between a man and a woman. There is often a combined internal urge to increase self-confidence and self-fulfilment, and an external pressure from relatives, friends and social circles. Thus, the wish to start a family must be seen both from the point of view of the social context of the individual and the individual's past history (13).

Quite a lot is known about the motives behind the wish not having a baby. This has been studied in cases of applications for legal abortion, sterilization and regarding the use of contraceptives (36, 38, 58, 69). However, it is astonishing to find how limited is the literature on the motives for having a baby (15, 25, 48, 71, 75). This question seems to be so fundamental that it is seldom or never raised. In sociology, psychology and economy there are several explanatory models regarding human reproductive behaviour. The closer these models get to a holistic view, the more they are made up of a synthesis of the different scientific theories (25, 70, 71). There is a risk that the existential problem of infertility in many cases develops into a mainly medical problem which should be solved by medical intervention, such as tubal plastic surgery, heterologous insemination or in vitro fertilization. Infertile couples and others too have different motives for their wish to have a baby, and this is conceivably of importance for the understanding and treatment of problems which might develop during the investigation period and following the treatment of infertility. Therefore one purpose of the present investigation was to study the wish of infertile couples to have a child before and 2 years after tubal surgery in the woman (paper V).

Studies on the psychological impact of infertility have included the use of projective tests, personality tests and clinical observations. These studies are characterized either by giving couples questionnaires inquiring about their present and past feelings and reactions to infertility.
(81) or by conducting open-ended interviews (9). The investigations are usually based on observations at one single session. Although infertility affects the couples as an entity, the samples have usually concerned women and only to a very limited extent couples. Moreover, comparisons have mostly been drawn with other couples having children (41, 51, 57). Describing the crisis reactions of infertility has often been the focus of anecdotal reports of clinicians (20, 47, 53, 54), as well as descriptive studies on couples undergoing treatment for infertility. To investigate thoroughly the impact of infertility requires empirical studies that are prospective and longitudinal. This design is needed to verify the nature of the emotional disequilibrium experienced by infertile couples. The studies need to include men as well as women to make possible and complete examination of the impact of infertility on the individual and the couple.
AIMS OF THE STUDY

Thirty infertile women with tubal damage and their men were investigated. The aims of the present study were:

- to elucidate current life situation, social background, personality characteristics, psychiatric anamnesis and mental status in the couples prior to tubal surgery in the woman;

- to describe the psychological and social effects of the medical investigation and treatment;

- to investigate the psychological, sexual and social impact of infertility before and 2 years after unsuccessful surgical treatment;

- to elucidate whether and if so to what extent psychological reactions compatible with a crisis pattern could be identified;

- to study overt motives to have a child before and 2 years after tubal surgery.
SUBJECTS

Infertile couples

During a period of one year (1981) all women who were to undergo surgical treatment for infertility at the Department of Obstetrics and Gynecology, Umeå University, were asked to participate in the study. All the 30 women and 29 men were willing to co-operate. One man claimed that infertility was not a problem for him and that he had no time to participate in the study. The mean and median age of the women was 29 years (range 21-34) and for the men, 30 years (range 24-53).

Twelve women had never conceived, while the rest had at some time previously been pregnant. Eight women had experienced a normal pregnancy and some had had an ectopic pregnancy, spontaneous or legal abortion. Ten of the couples were living with a child at home, and five were the child's biological parents. The average duration of the present infertility for the whole group was about 5 years (range 2-12). After at least one year of unsuccessful efforts to conceive, they had undergone various routine investigations such as semen analysis, determination of ovulation, post-coital or/and penetration tests, as well as laparoscopy (sometimes hysterosalpingography) during 2 years. When tubal damage was diagnosed as the cause of the infertility, the patients had to wait about 18 months for the surgical treatment because of the limited resources to deal with the numerous patients treated at our central infertility clinic. Some women were informed about the tubal damage and subsequent infertility following acute laparotomy, e.g. for ectopic pregnancy.

One man did not want to attend the follow-up interview; he had obtained a divorce. Thus, the participants included in the study 2 years after the surgery were 30 women and 28 men. Within 2 years after the tubal surgery, 4 couples had achieved a normal pregnancy. At the last interview, 3 couples had recently divorced.

Reference groups

Some of the results were compared with data previously obtained from a group of pregnant women. A total of 101 consecutive women attending the
antenatal clinic during the first trimester of pregnancy were asked to complete a questionnaire which was in part identical with that of the present study, covering psychosocial situation and background. All women in this reference group intended to fulfil their pregnancy.

The results of the symptom checklist were compared with those of two reference groups of 66 apparently healthy medical students (28 women and 38 men) and 34 women from the hospital staff and their men.

A group of 30 pregnant women who had decided to go through with their pregnancy and their men answered the same list of motives for having a baby as did the infertile group. Moreover, the group of 101 pregnant women planning to go through with their pregnancy also answered the same list of motives as the infertile group when coming for their first medical examination. Furthermore, the same list was given to a group of 459 women applying for legal abortion and they were asked to report the motives they would consider if they were to become pregnant in another situation than the present one.
METHODS

Interviews

Over a period of 2 years, four interviews were performed with the women and two with their men (Fig 1). Altogether 177 interviews were performed - all conducted by the same investigator (A.L.). Each interview lasted for about 1.5 - 2 hours. All were performed at the Department of Obstetrics and Gynecology in Umeå, with an exception for 3 couples who at the follow-up interview 2 years after surgery had moved so far away that these were conducted in their home towns. A standardized questionnaire and semistructured interviews were used. Before the investigation started, the method was tested on two infertile couples (= four interviews), and the protocols were adjusted accordingly.

Fig 1. General design of the present study.

At the first interview all the 59 subjects participated in an individual interview about one month before the reconstructive tubal surgery. The two partners in each couple were interviewed separately but on the same day. Initially a standardized questionnaire covering age, marital status, number of children, education, economy, growing-up conditions, psychiatric history and family relations was completed. Thereafter a semistructured interview was carried out focusing on the following topics: the
effects of infertility on marital relationship, sexuality, self-confidence, social life, emotional reactions and mental symptoms caused by the infertility, attitudes towards others' children, towards pregnant women and to relatives and friends, the motives for having a baby, opinions about adoption, when infertility was recognized as a problem, how the first medical contact was initiated, the experience of the infertility investigation and its influence on their relationship and sexual life, and expectations about the surgical treatment.

The second interview was semistructured and performed only with the 30 women on one of the first postoperative days. The purpose was to register their emotional status and psychological reactions postoperatively. All tuboplastics were conducted by the same surgeon, thus all women were told the outcome of the surgical treatment by the same physician.

The third interview was carried out about one month later at second-look laparoscopy and included only the 30 women. The main purpose was to evaluate the women's reactions to the given information about the prospects of succeeding with a pregnancy.

The fourth interview included all the 30 women and 28 of their men and was performed about 2 years after the tubal surgery. The interview was semistructured and again the two partners in each couple were interviewed separately but on the same day. The following main topics were discussed: changes in the couples' situation since the first interview, e.g. pregnancy, divorce, adoption, economy, marital relationship, social life, mental health, sexual life, emotional reactions and mental symptoms caused by the infertility, effects of infertility on self-confidence, marital relationship, sexuality and social life, attitudes towards children, to pregnant women, to relatives and friends, attitudes to the medical investigation, their experience of the surgical treatment, the influence of the operation upon their mutual relationship, sexual life and self-confidence and possible future solutions of their infertility problem.
**Eysenck Personality Inventory**

At the first and fourth interview the participants completed the Eysenck Personality Inventory (EPI), Form A (29) to evaluate their personality structure. The EPI measures two different personality dimensions: "Neuroticism", which is an expression of the tendency to emotional lability and anxiety reactions of various kinds, and "Extroversion" measuring outward directedness and impulsiveness. The EPI scale "Extroversion" describes a sociable person with many friends, being an impulsive individual, carefree and easy going. The typical introvert person keeps feelings under control, lives a well ordered life and is reliable.

**Symptom checklist**

The presence of various mental symptoms during the 6 months prior to the first and fourth interview was recorded by using a symptom checklist. The list comprised 30 symptoms and was essentially the same as that used by Uddenberg and others in previous studies (74). All participants indicated the occurrence of various symptoms such as irritability, fatigue, insomnia and feelings of depression and loneliness. For comparison, they were also asked to estimate the presence of the same symptoms during earlier periods of their adult life.

**Motive list**

At both the first and fourth interview, all participants were asked about why they wanted to have a child. Initially they answered an open question about their motives. Thereafter they were asked to choose at most 5 from 36 different motives to have children. The motives were selected from previous studies and the investigators' own experience. The motive list was first tested among 20 women on the hospital staff and 20 male students from the University School of Social Work and thereafter revised before use in the study.

Apart from the inevitable impact of the interview-contacts during this longitudinal investigation, the couples did not receive any other professional support from social workers or psychologists.
Statistical methods

Statistical significances were assessed by the Mann-Whitney U-test, the Wilcoxon matched-pairs ranks test and by the $X^2$-test with Yates' correction where appropriate. The relationships between variables were calculated as product-moment correlation coefficients.
RESULTS AND DISCUSSION

The population of infertile couples is too widely differentiated and the experience of childlessness too disparate to justify generalizations. The intention is not to make the findings of this study representative or comprehensive for the whole group of infertile couples. The study is rather the result of a psychological and social analysis based on personal interviews of a rather small but specific group of individuals with the same problem "tubal infertility" and who underwent the experience of "surgical treatment".

In the present longitudinal study, four interviews were performed with the women and two with their men; all were conducted by the same investigator. In other investigations comparisons have mostly been made with other couples having children (41, 51, 57). In this study, however, interest has principally centered on the interpersonal and intra-individual changes. Comparisons have been made mainly between the infertile women and their men and each subject was used as his/her own control. Several subjective variables were involved regarding the woman, the man, and the complex dynamics of the couple's mutual relationship. This fact has made it impossible to find an appropriate control group.

PSYCHOSOCIAL CHARACTERIZATION (Paper I)

The couples in the present study lived in stable relationships with a mean duration of 7 years (range 2-14). Seven women already had a child of their own and 9 out of the 29 men were fathers, often in previous relationships. Ten couples had one child living at home. Five of the couples had a biological child together and 1 couple had adopted a child. Most of the participants described a harmonious childhood and judged their present relationship and sexual life as "harmonic" or "acceptable". Most of them considered their economic situation and occupation as satisfactory. The present social situation and psychosocial background in the infertile women were quite similar to those of a reference group of 101 pregnant women. The good psychological background and current situation of these infertile couples might have contributed to and enhanced
the feeling that their lives were empty and lonely without children. They had apparently good resources for the raising of a family, but they bitterly found themselves victims of an invisible handicap.

The participants had a remarkably large number of siblings, being 3.1 (mean) for the women and 3.4 for the men in contrast to the average of only one for the Swedish population (35). Apart from 3 individuals who were the only child, the numbers of siblings ranged between 1 and 12. Values and attitudes towards family life and reproduction are established during childhood (74, 80) and clearly this background factor could add to the emotional burden of infertility.

Eight women reported previous mental disorders, 4 during adolescence, and 4 in adulthood. Four had been treated as in-patients at a psychiatric clinic, but not during the past 6 years. Four of the men reported previous mental disorders, 2 as adults, and both had been treated as in-patients. Thus, in 11 couples at least one partner had a psychiatric anamnesis of clinical relevance. There is no indication that the participants exhibit an increased psychiatric morbidity compared with a normal population. For instance, compared with a group of women from an urban population in Gothenburg in Sweden (64), the infertile women did not differ as regards in-patient or out-patient care during the last 6 years prior to the investigation.

Previous reports that infertile patients in general do not exhibit more neuroticism or otherwise differ as regards personality characteristics are supported by the present study (31, 42, 51, 67, 78). According to the results of the Eysenck Personality Inventory (EPI) Form A, before and 2 years after the operation, the participants did not differ from a normative control group (29), nor from a reference group of apparently stable women (37), or a group of military conscripts (46). They differed distinctly from neurotic and clinically depressed patients (45). The men were scoring rather low on the neuroticism scale both before and 2 years after the tubal surgery, and at the first interview the women were scoring significantly higher than the men on the neuroticism scale.
The occurrence of mental symptoms on the symptom checklist (Appendix 4a,4b) showed no significant change in the total number of symptoms during the 2 years of investigation, either among the women or among the men. According to the self-rating, half of the infertile women had five or more different symptoms representing various aspects of mental imbalance. Seen as a group the women had more mental symptoms than the men before and 2 years after tubal surgery. They also had more symptoms than women on the hospital staff, but did not differ from a group of medical students. As a group, the infertile couples did not differ from the two reference groups. Even 2 years after the operation the most prominent symptoms among the women were irritability, fatigue, depression and restlessness.

The psychiatric anamnesis, EPI results and the results of the symptom checklist reveal that the infertile couples do not seem to have any specific personality traits. The mental symptoms and emotional problems in these individuals appear rather to reflect the burden of infertility than personality characteristics.

MARITAL RELATIONSHIP (Papers I and II)

The majority of the infertile couples considered their marital relationship as "very good" or "good" before the operation. Their re-evaluation, however, 2 years after the operation showed a clear trend towards a deterioration. Five couples had discussed a separation and 3 of these divorced later. Regarding the couples as an entire group, no statistically significant changes could be confirmed that might have been due to the small sample. These findings were not unexpected, since the couples participating in our study had succeeded in living together in spite of a protracted infertility problem - which is an indication that their marital relationship had been stable. Although the problem of infertility is a burden for the relationship, childless marriages in themselves do not seem to be unhappy. Our findings are supported by previous studies (41, 61).

Concerning the partners' feeling for each other, however, a statistically significant deterioration was noticed, especially on the part of the men.
Only 13 of 24 men reported 2 years after the operation that he was deeply fond of his partner, while all confirmed the same feeling 2 years earlier. A possible explanation could be the fact that before the operation, deep empathy and tender sharing of feelings characterized most of the couples, besides the fact that they were hopeful or convinced that they would succeed with a pregnancy after the operation. After 2 years without any pregnancy, feelings of grief increased, especially among the men. They tried to maintain the impression of being comforting and optimistic, but they could not console and support their women to the same extent as previously. This probably resulted in the development of a wounded emotional contact between the mates. Disturbances in the emotional contact between the partners had already been reported before the operation and a tendency towards an aggravation could be noted 2 years later. The majority of the participants had the feeling that they could not openly show sadness and disappointment in the presence of their partner. As far as we know, such observations have not been described in the literature previously, possibly due to the fact that most of the investigations have been based on observations on one single occasion, usually not including the male partner.

The majority of the couples considered that the infertility problem affected their relationship both before and 2 years after the operation. This influence was either negative, depending on conflicts associated with their infertility and sometimes withdrawal from each other, or positive because of an increased empathy which improved marital satisfaction. The number of men, however, who reported a negative effect of the infertility on the marital relationship had increased significantly 2 years after surgery (P < 0.05).

SEXUAL LIFE (Papers I, II and III)

Sexual disturbances and sexual inferiority may be the most complex of the many emotional problems with which an infertile couple has to deal. Although nearly all women described their sexual life before the operation as "harmonic" or "acceptable", they had significant lower ratings than the reference group of pregnant women (P < 0.05). The ovulation investigation with basal body temperature records (BBT) implied a frustration to
most of the couples' sexual life because they used it to plan intercourse. "Sex on demand" was a burden and the majority reported that it had a negative influence on satisfaction. Apparently couples with a previously satisfactory sexual life may develop a sexual dysfunction as a result of the pressure and anxiety arising from their infertility and even as a result of the investigation and treatment (7, 26, 28, 66, 76).

The couples' sexual life deteriorated during the 2 years after the operation - significantly so among the women. This could be due to disturbances in mutual emotional contact. Many couples also started with planned intercourses after the operation, which also had a bad effect on sexual life. At the time of the first interview, only 3 couples found it worthwhile to have planned intercourses, whereas after the operation 22 couples did so. The negative influence on sexual life was most pronounced among the women. One explanation may be that the women felt responsible for the childlessness, and attached fertility to femininity, sexuality and self-esteem (47, 63, 73). Often women are unable to let themselves go completely in their own sexual responses because they are obsessed with the "idea of a child" and believe that the sexual act itself is useless if its purpose is not procreation (3). Often there is a tremendous build-up of hope and tension toward the end of the woman's cycle and when the menstrual flow begins, many women are plunged into a deep, acute depression (53). A vicious cycle of emotional tension ---&gt; sexual problems ---&gt; emotional tension was often created within the couple. It is important to inform the couple that sexual disturbances are common when they have to face the problem of infertility. A detailed sexual anamnesis followed by regular discussions about sexual activity and satisfaction during the period of investigation and treatment of infertility may help to reduce the negative effects caused by the infertility itself and planned intercourse (33). The early recognition of impaired libido, inhibition of orgasms, or signs of impotence may prevent the establishment of a situation which is difficult to reverse.

EMOTIONAL AND SOCIAL IMPACT OF INFERTILITY (Papers I, II and IV)

Infertility has severe emotional and social effects. After about one year of efforts to conceive, most individuals reported that they started to
consider their failure to achieve a pregnancy as a psychological problem. The couples were asked specifically about emotional and social effects which, in their own opinion, were due to their infertility problem, both before and 2 years after the operation. On comparing the duration of infertility with the number of emotional and social effects, no correlation could be found either in the women (R = 0.12) or in the men (R = 0.17). Moreover, no significant differences in this aspect could be found among those who had previously borne a child, compared with those who had not. The women and men reported grief, periodic depression, irritability and feelings of inferiority to be the most common emotional reactions caused by their involuntary childlessness (Table 1). Sixteen of the women expressed feelings of guilt because of their infertility. These data agree closely with clinical experience from infertility counselling (54, 80).

### TABLE I  EMOTIONAL AND SOCIAL EFFECTS OF INFERTILITY AS REPORTED BY 30 WOMEN AND 29 MEN

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grief</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Depression during menstruation</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Irritability</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>Guilt</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>Inferiority</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Sexual aversion</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolation</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>No genuine emotional support from relatives and friends</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>No one to talk to</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Aversion towards pregnant women</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>Aversion towards children</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total reported effects</strong></td>
<td>215</td>
<td>110</td>
</tr>
</tbody>
</table>

At the time of the first interview all women knew that their tubal damage was the cause of the couple's infertility. Therefore it is not surprising that the women reported more emotional effects than the men,
both before and 2 years after the tubal surgery (p < 0.01). Feelings of grief, however, were reported in about 90% of the cases, among both the women and the men at the last interview. There was no significant increase in the total number of symptoms among the women and the men 2 years after surgery. In spite of changing attitudes and trends towards equality between the sexes, parenthood is still associated more closely with the female role, and fertility seems to be comparatively more important for a woman's self-esteem (33, 63, 73). Therefore women often feel more responsible when attempts to achieve a pregnancy are unsuccessful. Depression during the menstrual period was reported at the last interview by 93% of the women who had failed to achieve pregnancy.

Adverse feelings towards pregnant women (e.g. sadness, jealousy and aggression) were very common among the infertile women. One-third of the men also had similar feelings. Furthermore, contacts with other people's children could evoke frustration, unhappiness and feelings of injustice, and therefore some women and a few men tried to avoid such contacts. Two years later the number of women who reported such feelings had increased, and the difference between the women and men became significant (P < 0.01). These findings differ from those of some previous studies. Van Keep found that 90% of a group of childless couples had a favourable attitude to other people's children and they liked being in their company (41). In our study the men often tried to approach other people's children, while women wanted to avoid them. This finding is in agreement with the study of Mai et al. (51).

Most of the infertile couples, particularly the men, found it very difficult to talk to others about their infertility problem. As many as 20 of the men had "no one to talk with" but their infertile partner. It is also remarkable that a significant increase in grief among the men was reported 2 years after the operation. The couples generally felt that relatives and friends could not fulfill a supportive function regarding the psychological problem of infertility. At the last interview only 4 women and 4 men considered that they received genuine emotional support from their relatives and friends, and some even experienced these contacts as burdensome. This might be a result of taboo among people as regards infertility.
Most of the infertile couples, particularly the men, often found it difficult to talk with others about their childlessness. Moreover, it seems that many people avoid talking about their own children in the presence of childless couples. All these circumstances hamper an open discussion and possible support from relatives and friends.

PSYCHOLOGICAL REACTIONS TO THE MEDICAL INVESTIGATION AND SURGICAL TREATMENT (Paper II)

In most couples the woman was the first to recognize the infertility as a problem and to initiate open discussions on the subject. She also arranged the first medical contact. The patients' delay after the problem had been identified was up to 2 years. The main reasons for their hesitation to seek medical help were fear of a final negative diagnosis and a fear of getting into a state of emotional stress and physical pain during investigation and treatment.

BBT recordings

The ovulation investigation with BBT records meant frustration in the sexual life of most couples. Twenty women had used BBT also as a way to plan intercourse. After interruption of the regular BBT recordings, half of the women declared that they were still extremely aware of physical changes during the menstrual cycle. One-third of the men also believed they knew exactly when ovulation was expected. The effects on sexual life of planned intercourse according to BBT were negative in all couples. The planning often made intercourse a burden and sometimes caused sexual aversion, lack of orgasm, frigidity and impotence. One-third thought that planning was more difficult for the man, and one-third for the woman. Sexual life had become "sex on demand" instead of "sex on desire". The clinical value of BBT records in the determination of ovulation has declined since the development of new techniques for hormonal analysis. Therefore and because of its psychological side effects, BBT should be used with caution and only when absolutely necessary.

Semen analysis

Semen analysis is an important and physically non-traumatic examination for the man. Half of the men, however, experienced this examination as
psychologically difficult. Feelings of shame, embarrassment, degradation and stress were frequently described among the 29 men. They found the environment of the hospital unnatural and unpleasant, and they often had difficulty in producing an ejaculate. In a previous clinical study, 26% of the men refused to have their semen analysed (16). Feelings of worry and anxiety were common before the outcome of the analysis was known. The fact that the information about the final result was often given by the gynecologist to the woman, or even in some cases failed to appear, added to the negative experience. If from the beginning of the infertility investigation the man becomes an integral part, the gynecologist can inform and motivate him personally.

Expectations before surgical treatment

Most of the participants considered that the information about the surgical procedure and the possibility of succeeding with a pregnancy after tubal surgery was inadequate. Attempts were made by the surgeon not to cause exaggerated hopes about the results of the surgical treatment. In spite of these attempts, 19 women and 19 men still had great and sometimes unrealistic expectations of future pregnancies and children. It seems that the participants recalled mainly the positive parts of the information, while they "forgot" the negative parts. Such repression is pronounced in the presurgical context, probably owing to the inhibitory effects of anxiety on learning and the fact that high proportions of surgical patients experience moderate to high levels of preoperative anxiety (59).

Before the operation, 43 out of the 59 individuals believed that if the prognosis was found to be extremely poor, then it would probably be better for them to be informed that they had no chance of conceiving at all. Such definitive negative information was believed to cause less disappointment and despair than knowing that there was still cause for hope even though the chances were extremely slim.

Reactions to the surgical treatment

Before the tubal surgery, more than half of the women and one-third of the men were anxious and afraid. Seventeen women had undergone one or more previous laparotomies and many had negative experiences. Immediately
after the operation, most of the women experienced a feeling of release and satisfaction. Many women considered that the psychological suffering was worse than the physical pain and complications. A couple of days after the operation, one-third of the women were found to have brief periods of unexpected depressive feelings when they realized that they had a real chance of becoming pregnant. Nine of them were primarily infertile. They felt extremely sad, wept a lot and wanted to be alone. A possible explanation could be an ambivalence concerning their real motives toward having a baby, which some also revealed. Such ambivalence is common among fertile women and men, but might be a forbidden thought for the infertile couple.

In 26 women a second-look laparoscopy was done one month after the operation. Most women afterwards had feelings of relief because the treatment was completed and they had increased their possibilities of conceiving. The final information about the prognosis of their infertility was given by the surgeon himself after the laparoscopy. The information varied and most of the participants thought it was adequate. Twenty-six women and 19 men, overestimated the prospects of having a child of their own. Most couples were very optimistic and they had exaggerated hopes for the future management of the infertility problem. Half of the participants expected a pregnancy within one month after the second-look laparoscopy and the majority (80%) within 6 months. This can illustrate the phenomenon of denial caused by the great wish for a child. As long as the couples know that they stand a chance of having their own children - even though this chance is small - they delay confrontation and development of alternative solutions to the infertility problem. Therefore the gynecologist should not try to "console" the couple by overestimating the chances of conceiving or start again with clinically irrelevant examinations. Many of those who did not succeed with a pregnancy had evident psychological problems already within one year after the operation.

Future considerations

In spite of the couples' protracted infertility and the psychological problems caused by the investigation and treatment, still 2 years after
the operation one-third of the couples who had not achieved a pregnancy were willing to do whatever required to succeed with a pregnancy, e.g. further examinations, operations, or in vitro fertilization. Five women and 6 men still hoped to succeed with a pregnancy without any further medical help. Five women and 5 men were considering adoption. Only 3 women and 2 men had resigned themselves to the situation, but all of these had already got a child prior to the operation. This observation illustrates that the acceptance of infertility is extremely difficult, and is sometimes hampered by the persistent hope for a miracle (8). The development of new techniques, such as in vitro fertilization can also make it nearly impossible to succeed with the acceptance of permanent childlessness. The couples' future considerations concerning solutions of the infertility problem showed that about 70% had neither succeeded nor tried to attain any solution to the infertility problem 2 years after unsuccessful surgical treatment.

It is obvious from the present study that the medical procedure has psychological side effects which may provoke anxiety and in some couples exacerbate the burden of infertility. Several negative effects on the marital relationship, sexual life and emotional status were caused by the medical management.

THE CRISIS OF INFERTILITY (Paper IV)

Most of the psychological symptoms recorded in the interviews with the infertile couples over a period of 2 years can be classified in terms of depression, guilt and isolation. These syndromes are parts of the reactive phase of the general crisis reaction where four main phases have been identified previously (17, 21): 1) an initial phase (shock, surprise, denial), 2) a reactive phase (frustration, anger, anxiety, guilt, grief,
depression, isolation, 3) an adaptive phase (acceptance), and 4) a resolution phase (planning of future solutions). The majority of the women in the present study were judged to be in the reactive phase of the crisis at the first interview and many of them were still in this phase 2 years later. Thus, it seems that the crisis of infertility differs from the common traumatic crisis where the duration of the reactive phase is usually 6 weeks or less (17, 21, 54). Figs 2 and 3 illustrate the distribution of the women and men in the four phases of the crisis reaction at the interviews before and 2 years after the surgical treatment, according to the investigators' judgement.

Fig 2. Distribution of the women in the four phases of the crisis reaction before (n=30) and two years after (n=26) the surgical treatment.

Fig 3. Distribution of the men in the four phases of the crisis reaction before (n=29) and two years after (n=24) the surgical treatment.
The reaction pattern of the men seems to lag far behind that of the women. Most of the men were in the initial phase at the first interview, while 2 years later the majority had reached the reactive phase. At both interviews, 1/3 of the men had no apparent symptom of a crisis, and nearly all of them had become fathers previously. It is remarkable that in only 1/4 of the cases at the first interview and in 1/3 at the last interview were the mates in the same phase. This easily induced misunderstandings and problems in the marital relationship, and quite often the mates needed professional help to elucidate these circumstances.

Depression

Various expressions of depression were a common finding, both before and 2 years after tubal surgery. While a few women had long periods of deep depression, short but recurrent episodes were more common. Two years after unsuccessful surgery, 93% of the women felt desperate, extremely sad and disappointed at the onset of the menstrual bleeding. Depression could also be provoked by social events like family celebrations and when close relatives and friends had a baby. Many women suffered from grief and despair because of their involuntary childlessness. They become emotionally vulnerable and were easily irritated. Mourning was not only about the wish for a child that never seemed to get fulfilled, but also about the loss of lifestyle and future prospects they had hoped for. Many women expressed their loss of the experience of a pregnancy and the bearing of a child. Two years after surgical treatment, 2 women revealed that they had had suicidal thoughts. Apart from the burden of infertility, these 2 also had an incompatible marriage and a previous psychiatric anamnesis.

A few days after the tubal surgery 10 women had a postoperative state of depression, which lasted for a few days and for a few women it persisted for some weeks. Although they were content with their improved prospects of conceiving, they felt sad, cried and wanted to be alone. Nine of the women were primarily infertile and 3 divorced later. The men had significantly fewer depressive symptoms than the women. However, 2 years after the operation their feelings of grief had increased significantly (P < 0.01). Almost all couples felt that infertility could
in some cases have a psychological origin, and therefore their feelings of depression often provoked anxiety, as they believed it could reduce their chances of becoming pregnant.

**Guilt**

All the women knew at the time of the first interview that their tubal damage was the cause of the couple's involuntary childlessness. Half of the women had strong feelings of guilt and lack of self-confidence because of the infertility. They sometimes reproached themselves for previous legal abortions, venereal infections, or use of contraceptives. Feelings of guilt were found to disturb the rapport between partners. Only 10 men felt that they could openly express their own disappointment and grief to their partner. The others usually believed that this would only add to her psychological burden and feelings of guilt, and therefore avoided expressing their own feelings. During the period of the present investigation the couples had increasing difficulty in talking openly about their involuntary childlessness. Two years after the operation, only one-third of the women claimed that they could show their true feelings in the presence of their partner. They also felt a general inferiority and even inferiority in their marital relationship. After the tubal surgery, common spontaneous comments were "Now I have done my part" or "No one can blame me for not having tried". Some felt more feminine and complete as women, and half of them thought that if the childless state were to persist, it would at least be somewhat less difficult to bear. It was also important for the women to prove to their own parents and relatives that they had made seriously attempts to conceive.

**Isolation**

Social isolation was also common among the infertile couples. Two-thirds of the women and half of the men felt before the tubal surgery that talking with other people about infertility was very difficult. Involuntary childlessness was considered a private and delicate problem that nobody else could really understand and therefore they made substantial efforts to avoid open discussions and to conceal their problem. Some couples even tried to keep the tubal surgery a secret. They claimed that their previous
experiences from frank and open discussions were mainly unproductive. The great majority did not experience any genuine support or help from relatives and friends. Some described how they tried to fool their friends by pretending to be acting happy and content or how they avoided social gatherings so as not to disturb the cheerful atmosphere.

To one-third of the women, meeting other people's children had become so painful that they actively tried to avoid such situations. Meeting pregnant women was even more burdensome, as reported by 25 women and 12 men at the first interview. They felt that life had dealt unfairly with them and they felt jealous, got angry, sad, depressed and often had sleep disturbances. Feelings of isolation were also apparent within the couples. The partners often had different reactions, attitudes and behaviour, and sometimes took a quite opposite opinion about adoption, how infertility had influenced their relationship, their experience of their marriage and sexual life. They had increased difficulty in frankly discussing their infertility problem and their feelings towards their partner and their sexual life became gradually more negative during the 2 years of the study. Half of the women described at the last interview how they dreamed nearly constantly and longed for a child, while the men seemed less occupied by such thoughts.

On comparing the syndromes of depression, guilt and isolation among primarily and secondarily infertile women, the occurrence of depression and guilt seemed to be rather similar in the two groups. Primarily infertile women, however, tended to experience more often inferiority, lack of self-confidence, social isolation and insufficient support from relatives and friends. On comparing men who already had a child with those who had not, the general impression gained was that depression, guilt and isolation seemed to be less frequent among the "fathers". The feeling of grief, however, was rather similar in both groups.

The majority of the women seemed to experience both a traumatic crisis caused by the knowledge that their fallopian tubes were defective, and a developmental crisis caused by their inability to reproduce. The men did not experience the same kind of traumatic crisis, since all of them...
knew that they were fertile. They did experience, however, a developmental crisis caused by the inability to have a child with their se and by not being able to fulfil their expectations and dreams. Thus, it seems that the crisis reactions specific for infertility are often protracted and repeated. Frequently a new event (e.g. ectopic pregnancy, miscarriage, acute laparotomy) would prevented the adaptation to and resolution of the previous trauma. Therefore, many women remained in a state of prolonged "chronic" crisis, with a risk of maladaptive behavioural changes, but in some cases there is a prospect of positive growth and increased insight. The person in crisis is extremely vulnerable. Successful resolution of the crisis of infertility may mean that couples choose a life without children, fulfilling personal life through marital love, career and social participation. Others choose adoption in order to share their love with a child, convinced that being a psychological – rather than a biological – parent is the crucial experience in child-rearing.

CHILDWISH (Paper V)

Motives of infertile couples

One part of the investigation was to elucidate overt motives for wanting a child. The most frequent spontaneous answer was "it is just a feeling". A few had obvious difficulty in giving a more precise answer. After the first vaguely expressed answer, the participants gradually started to describe how they felt that something was missing, they loved children, felt empty without them and wanted to have somebody to live for, they saw a child as a part of their self-fulfilment, it is natural to have children, it is the meaning of life, and it would be good for their marital relationship. They thought that their anxiety for getting old and/or dying would be stilled if they had children. Many said that having children "is the meaning of life" or that "we don't feel like a real family without children". The wish to have a child of one's own "flesh and blood" which would resemble themselves and the one they loved, was commonly described. "Children are fun - happiness and children go together" was also very frequently expressed. Some said that they experienced their motives as egoistic - the child would satisfy their own needs.
Those who had got a child previously often described how they were too immature when they got their first child. They also wished to get a sibling for the earlier child. Half of the men and two-thirds of the women believed that there was a difference in childwish between men and women. Almost all thought that women had a greater childwish than men. The reasons for wanting a child were complex and individual. Apparently there are no simple answers to the question of childwish.

The most frequent motive on the list among the women was that a child was "an expression of love between man and woman" and for the men "to have somebody to live for". Two years after the operation the women mentioned three times as often that a child is "the meaning of life". No changes in motives among the men were found at the last interview.

In 20 out of the 30 couples one spouse gave at least one motive which was shared between the two. The most common expectation about how a child would change themselves was that they would feel more "happy and content".

The couples' specified answers from the open question and the motive list might be classified into four groups as philosophical, socio-cultural, interpersonal and intrapsychic motives. All these are intermingled and difficult to separate from one another and there are covert as well as overt motives for having a baby and not infrequently there is a conflict between these levels. To the philosophical motives might be referred the wish to make oneself live for ever through one's own children, it is the meaning of life or of God that man should reproduce himself. To socio-cultural motives could be referred the wish to become pregnant because it is a socially highly valued function, it satisfies the need of society for new citizens, having children is a way to achieve a social position for both men and women in most cultures. To interpersonal motives could be referred the feeling that the pregnancy is a confirmation of the relationship. The child is the visible and concrete expression of love between a man and a woman. It might also be seen as a promise of lasting faithfulness. To intrapsychic motives could be referred personal, individual motives. To have children of one's own might be a confirmation of one's own
sexual identity, and an experience of and a demonstration of independence. Through the child there is a possibility to re-experience one's own childhood and to identify oneself with one's parents. If all motives on the list were divided into groups consisting of "philosophical motives", "socio-cultural motives", "interpersonal motives" and "intrapsychic motives" it is clear that the intrapsychic and interpersonal motives could dominate for both men and women.

Motives in reference groups

The motives among the infertile couples were compared with the motives of a group of pregnant women and their men, a group of pregnant women without their partner and a group of women seeking legal abortion. The most common motive for having a baby in all these groups was the concept that a child is the ultimate expression of love between a man and a woman. The men had also very frequently the idea that they wanted a child to make their life worth living ("to get somebody to live for" or "having children is the meaning of life"). It seems that the infertile couples in the present study did not differ from the reference groups as regards their motives for having a child. The present investigation has earlier shown that the infertile women did not differ from others in their personality structure as measured with the Eysenck Personality Inventory. Their wish to have a child is probably no more neurotic than others. The same is obvious also concerning their men.

Adoption

There was great emphasis on having a child of one's own flesh and blood among the participants in this study. As a consequence the willingness to accept adoption as a solution to the involuntary childlessness was not very great. Before the operation one couple had adopted a child and 5 other couples were attempting to adopt. Two years later 2 couples had been successful in adopting a child and 4 couples were still trying to adopt. Half of the women and one-third of the men were generally positive to adoption. The general opinion towards adoption in the group was somewhat more positive 2 years after the operation. The men were generally less positive to adoption than the women.
The wish to have a child needs to be studied more systematically and more generally. Knowledge of the motives why a person/couple wants children might reveal possible ways to help them deal with their childlessness and to find other solutions than parentship to the crisis of infertility. For example, if the motives are mostly intrapsychic it might be useful to focus on a more egosupportive psychotherapy. If the wishes are more interpersonal it might be more reasonable to work on the marital relationship. Motivations for pregnancy and parenthood are multiple and very complex and it is necessary to develop more valid, reliable and sophisticated methods than those used in this study.

NEED OF COUNSELLING (Papers II, III and IV)

The present study clearly shows that mental symptoms and emotional conflicts are common among couples where a purely somatic diagnosis, i.e. of tubal damage, has been established. The importance of having the possibility of psychosocial counselling and support during and after the somatic investigation and treatment were stressed by all participants in this study. This has also been emphasized previously (11). The vast majority of the individuals (26 women and 19 men) admitted at the end of this study that they would have accepted this help if it had been offered them. The main topics they wished to receive help with were: problems in the marital relationship and sexual life, crisis and other psychological reactions connected with their infertility. Some couples also stressed their need of help to get rid of their permanent anxiety about succeeding with a pregnancy and to discuss alternative solutions to their involuntary childlessness. However, only 20% of the individuals agreed to participate in group sessions with other infertile couples.
The crisis of infertility is very complex and difficult to work through and in many cases the need for professional support was obvious. Most of the men for instance, had no one but their infertile partner to talk with about the infertility problem. Although its cause was found in the woman, the infertility is a problem for both partners and exerts considerable stress on the marital relationship. The couples' inability to achieve a pregnancy and to experience parenthood when it is truly desired implies that they suffer a great toll in the quality of their lives. This study has shown, however, that the partners do not always share the same experience of the impact of infertility. For example, in nearly half of the couples the man and the woman did not experience the influence of infertility on their marital relationship in the same way. Sometimes the mates had completely opposite experiences. The counselling should therefore be designed for both the individual and the couple. Major goals for the counselling is to help the individual suffering from grief to put the problem into perspective and discover and appreciate inner sources of self-esteem, irrespective of their reproductive ability.

Medical staff, especially gynecologists, often meet infertile couples in an acute psychological crisis and/or depression. It is important that the various reactions to the infertility problem are recognized by the medical staff. Patients should feel that their reactions are not only accepted and tolerated, but also common and shared by many other infertile couples. Some gynecologists may feel that the management of emotions is not their responsibility and that their task is to deal mainly with somatic problems. Other gynecologists, although they would like to consider the whole psychosocial context, claim that there is too little time and/or knowledge for the management of complicated psychological problems. The role of the physician is to understand, treat and cure. When the medical treatment of infertility fails, the couple and the physician both become frustrated (56, 77). Therefore dubious investigations and treatment, which are usually fruitless and merely protract the suffering, are often repeated. Only when the physician has overcome his/her own frustration is it possible to support the couple in their mourning process (34, 60). When all therapeutic efforts have proved unsuccessful, many gynecologists would prefer to give final information and
to terminate further investigations and treatments. This may be reasonable in most cases, in order to stimulate a confrontation with the existential problem of infertility and to initiate the development of alternative solutions. However, it need not necessarily mean termination of all contacts with the infertile couple, and many of the participants expressed their need for further contact with the responsible physician. The problem of infertility demands a holistic approach. Body and mind are inseparable (10). Therefore infertile couples deserve to be managed by an astute and empathetic physician and a skilled social and mental health professional. A major goal of the psychological management of the infertile couple is to facilitate a positive resolution of the crisis, regardless of whether the couple conceive or not.

According to the present study, the following factors are important in order to reduce as much as possible of the psychological side effects of the medical procedure: the investigation should be as comprehensive and short as possible; unnecessary and psychologically traumatic investigations like BBT recording should be avoided; one physician should be responsible and devote sufficient time for counselling and information; the man should be an integrated part from the beginning and throughout the investigation and treatment; a thorough sexual anamnesis should be taken and during the subsequent visits, discussions about the sexual life should be initiated; professional psychosocial counselling should be offered to all patients during and after the medical process; the couples should have a follow-up contact with the responsible physician about one year after the treatment program has been ended. Moreover, it is important that the medical staff dealing with infertile couples have an empathetic and understanding attitude. Such a holistic approach may prevent or alleviate emotional and psychological disturbances caused by the medical investigation and treatment.

To alleviate the psychological trauma caused by the infertility itself, more extensive changes are needed concerning our attitudes and approaches to childbearing and parenting. Society usually regards fertility as self-evident and there is little preparation for the possibility of infertility. It is the present generation's responsibility to prepare the children of today with the attitude of "if you have children ....' rather than "when you are going to have children ....".
CONCLUSIONS

- The psychosocial background and current social situation of infertile couples were quite similar to those of the reference group.

- Psychiatric anamnesis, EPI results and the result of the symptom checklist show that infertile couples not seem to have any typical personality traits that clearly distinguish them from others. The mental symptoms and emotional problems appear rather to reflect the burden of infertility than personality characteristics.

- The couple's marital relationship was quite stable. The impact of the infertility, however, often caused a deterioration in the partners' feelings for each other.

- Couples with a previously satisfactory sexual relationship may develop a sexual dysfunction as a result of the pressure and anxiety arising from their infertility, and also as a result of the medical investigation and treatment.

- The medical investigation and treatment of infertility has psychological side effects which may provoke anxiety and in some couples even increase the burden of infertility.

- The majority of the couples had no solution to their infertility problem 2 years after treatment was completed.

- Most of the symptoms among the participants could be classified in terms of depression, guilt, and isolation.

- The crisis of infertility differs from the common traumatic crisis; it is more prolonged and there are often repeated crisis reactions.
- Relatives and friends failed to fulfil a supportive function as regards the problem of infertility.

- Professional psychological and social counselling and support are needed during and after the medical investigation and treatment.

- The infertile couples' motives to having a baby do not differ from those of the reference groups. The most common motive is that a baby is the ultimate expression of love between a man and a woman.
GENERAL SUMMARY

The infertile couples in the present study generally did not differ with respect to psychological and social background, current life situation, neuroticism or personality characteristics when compared with apparently normal reference groups. The participants' personality characteristics as regards neuroticism and extroversion did not change during the investigation period of 2 years.

The emotional and social impact of the infertility was investigated, and several deleterious emotional and social effects were found both before and 2 years after the surgical treatment. Grief, depression, guilt, feelings of inferiority and isolation were commonly reported. Pregnant women and other people's children often evoked negative feelings. The women admitted to suffering such effects more frequently than the men.

The partners' feelings for each other were getting worse 2 years after the operation. There was also a tendency to a deterioration in opinions about marital relationships, but no statistically significant change could be found. At the final interview the women reported a deterioration of sexual life and the men found that the marital relationship was suffering increasingly due to the fertility problem. Negative effects on the couples' sexual life were reported by all individuals and were often associated with the planning of intercourse. Semen analysis was psychologically upsetting and feelings of shame and degradation were common. Fear and anxiety were increased before reconstructive tubal surgery and postoperative depression was observed. Most couples overestimated their chances of conceiving. The medical investigation and surgical treatment of infertility influenced the couple's mutual relationship and sexual life to a considerable degree. Emotional and psychological disturbances depend not only on the infertility itself, but also on the longlasting and time-consuming investigation and treatment process.

Most of the symptoms recorded in this longitudinal study could be classified in terms of depression, guilt and isolation. These syndromes are parts of the reactive phase of the common crisis pattern. Generally
speaking the women suffered more and more severe depressive symptoms than the men. Feelings of guilt were also more common among the women. Relatives and friends did not give genuine support, according to the majority of the couples. The crisis of infertility was generally prolonged and inhibiting, especially among the women. Most of the infertile couples had difficulty in working their way through and finding a solution to the crisis of infertility by their own means. Most of the women were found to be in the reactive phase of their crisis and many were still in this phase 2 years or more later. At the last interview, nearly half of the men had reached the reactive phase, while one-third of them still had no apparent symptoms of any crisis reaction.

The intrapsychic and interpersonal motives of wanting a child were dominant among both the women and their men. A central motive was that a child is an ultimate expression of love between a man and a woman. The motives of the infertile couples generally did not differ from those of the reference groups. It would seem that the childwish in infertile couples is no more neurotic than in others.

The importance of having the possibility of professional psychosocial counselling and support parallel with the investigation and treatment were stressed by all participants in this study. Although the cause of infertility is of somatic in origin, the management of infertile couples calls for a holistic approach.
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